

For optics researchers this book is a most valuable review of the 'state of the art' and will be rapidly recognized as such. I would warmly commend it, however, to any crystallographer – young or old – who is interested in looking behind the routine techniques that can all too easily be accepted without question. It will set up new trains of thought and stimulate closer analysis of the potential and limitations of some of our methods that could be very rewarding.

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### Electron density mapping in molecules and crystals.

Edited by F. L. HIRSHFELD. Pp. v + 143. Weizmann Science Press of Israel, 1977. Price \$13.00.

This double issue of the *Israel Journal of Chemistry* (Vol. 16, Nos. 2 and 3) reports the lectures given at the Bat-Sheva Seminar on Electron Density Mapping in April 1977. Though 14 authors have been involved in the 19 chapters and 2 appendices, the care of the authors and editor has resulted in a coherent publication which will be invaluable to anyone interested in precision studies of electron density.

In alphabetical order the authors are I. Absar, P. Coppens, Y. M. Engel, D. Feil, A. T. Hagler, N. K. Hansen, F. L. Hirshfeld, K. Kurki-Suonio, P. F. Price, B. Rees, V. H. Smith, E. D. Stevens, R. F. Stewart and S. Vega. Their names are sufficient to indicate that this is an authoritative publication.

The topics covered include: basic concepts of quantum chemistry for electron density studies; diffraction physics; total X-ray scattering; symmetry and its implications; density functions and many-centred finite multipole expansions; charge deformation models; vibrational averaging; systems for study; experimental problems; modified least-squares formalisms and Fourier methods; assessment of accuracy; representations of the electron density and its topographical features (this chapter contains some beautiful and instructive diagrams); spatial partitioning of charge density; conformational properties; NQR in solids.

The results for specific molecules and crystals are illustrative rather than comprehensive, and the strength of the volume lies in its descriptions of methods. The volume is complementary to the posthumous work by Barrie Dawson: *Studies of Atomic Charge Density by X-ray and Neutron Diffraction – A Perspective (Advances in Structure Research by Diffraction Methods)*. Vol. 6, Pergamon, 1975). Dawson goes more deeply into a more restricted set of topics. The present volume is well presented and should be on the shelves of all crystallographic libraries.

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### Books Received

*The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.*

**Images.** By C. A. TAYLOR. Pp. viii + 205. London: Wykeham Publications, 1978. Price £4.50. Profusely illustrated, this new member of Wykeham Science Series, addressed primarily to sixth-form school students, is a most readable, enjoyable and illuminating introduction to all kinds of imaging process: from the humble camera to electron microscopy, holography, Schlieren techniques and medical imaging. The underlying physics is the unifying theme. X-ray diffraction receives due mention, in its place.

**Landolt–Börnstein. Numerical data and functional relationships in science and technology. Group III. Crystal and solid state physics. Vol. 7. Crystal structure data of inorganic compounds. Part c1.** By W. PIES and A. WEISS. Key element N. Substances No. c1 to c1133. Pp. xxv + 260. Berlin: Springer, 1978. Price (cloth) DM 290.00, US\$145.00.

**Three-dimensional nets and polyhedra.** By A. F. WELLS, Pp. x + 268, Figs. 224, Tables 41, New York: John Wiley, 1977. Price £22.00, \$36.00. A review of this book, by Walter Gebert, has been published in the September 1978 issue of *Acta Crystallographica*, Section B, page 2958.

**Crystal growth and materials.** ECCG1, Zürich, 1976. Edited by E. KALDIS and H. J. SCHEEL. Vol. 2 of the series: **Current topics in materials science.** Edited by E. KALDIS. Pp. xvi + 916. Amsterdam: North Holland, 1977. Price \$122.50, Dfl. 300.00. A review of this book, by M. B. Small, has been published in the October 1978 issue of *Journal of Applied Crystallography*, pages 673–674.

**Preparation and crystal growth of materials with layered structures. Physics and chemistry of materials with layered structures. Vol. 1.** Edited by R. M. A. LIETH. Pp. ix + 280. Dordrecht, Boston: Reidel, 1977. Price Dfl 95.00, US \$38.00. A review of this book, by B. G. Silbernagel, has been published in the November 1978 issue of *Acta Crystallographica*, Section B, page 3498.

**Crystal Growth 1977.** Edited by P. L. PARKER, A. A. CHERNOV, G. W. CULLEN and J. B. MULLEN. Pp. xvi + 662. North Holland, 1977. Price Dfl 350.00, US\$152.25. A review of this book, by B. Cockayne, has been published in the December 1978 issue of *Journal of Applied Crystallography*, page 720.